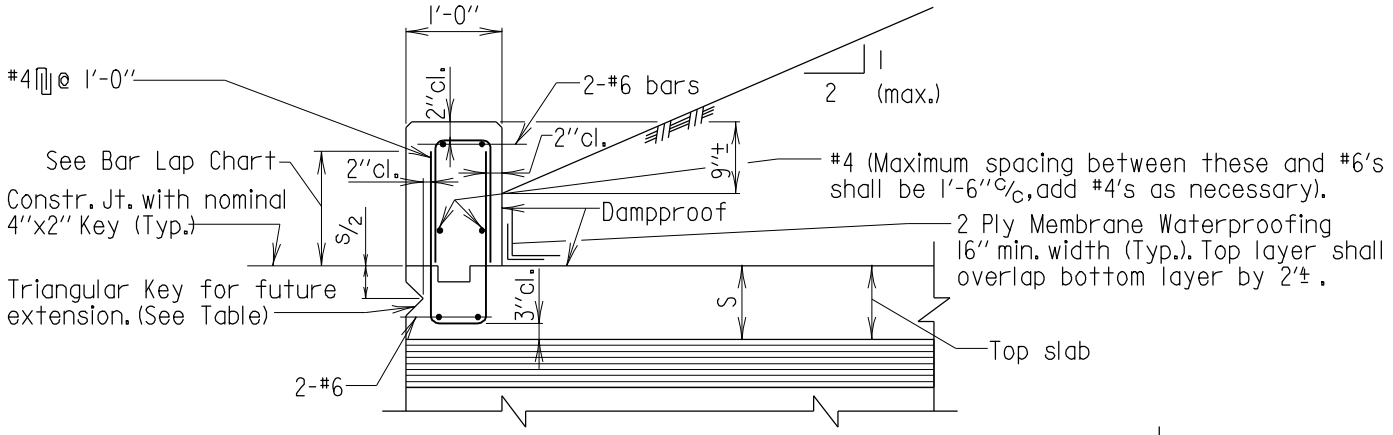
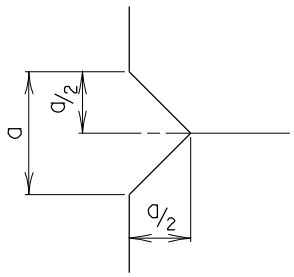
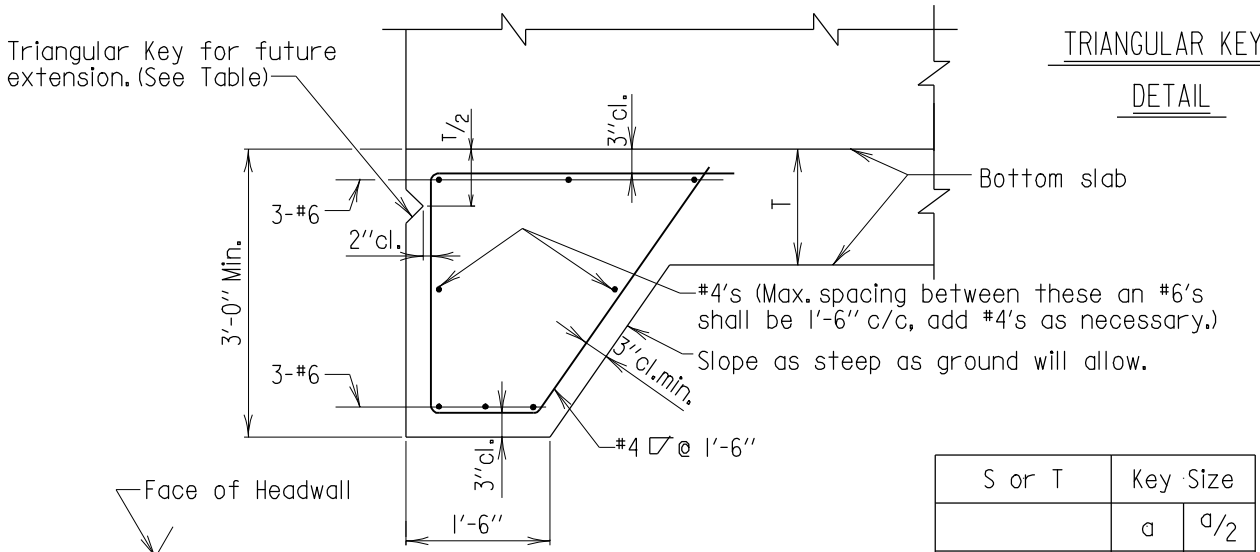


HEADWALL SECTION

Scale: 1/2" = 1'-0"



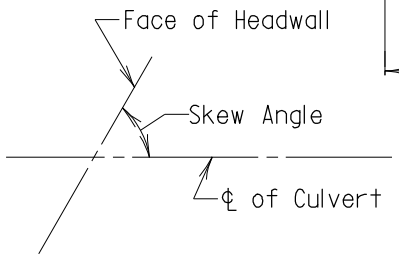
TRIANGULAR KEY DETAIL



TOE WALL SECTION

Scale: 1/2" = 1'-0"

S or T	Key Size	
	a	a/2
Less than 12"	3"	1 1/2"
12" to 18"	4"	2"
18" and over	6"	3"



SKEW ANGLE

Notes:

1. When skew angle of box culvert is less than 70° see main box culvert sheets for additional reinforcing steel. (See Above)
2. Normal box culvert reinforcing steel not shown.
3. Maximum height of headwall is 4'-6" see main box culvert sheets for added reinforcing steel if this height is exceeded.
4. All keys are nominal size.
5. Design is valid for live load surcharge.

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 6/20/75

REVISIONS	
SHA	FHWA
8-1-85	6-8-90
10-27-92	·
1-22-01	·
10-9-07	·

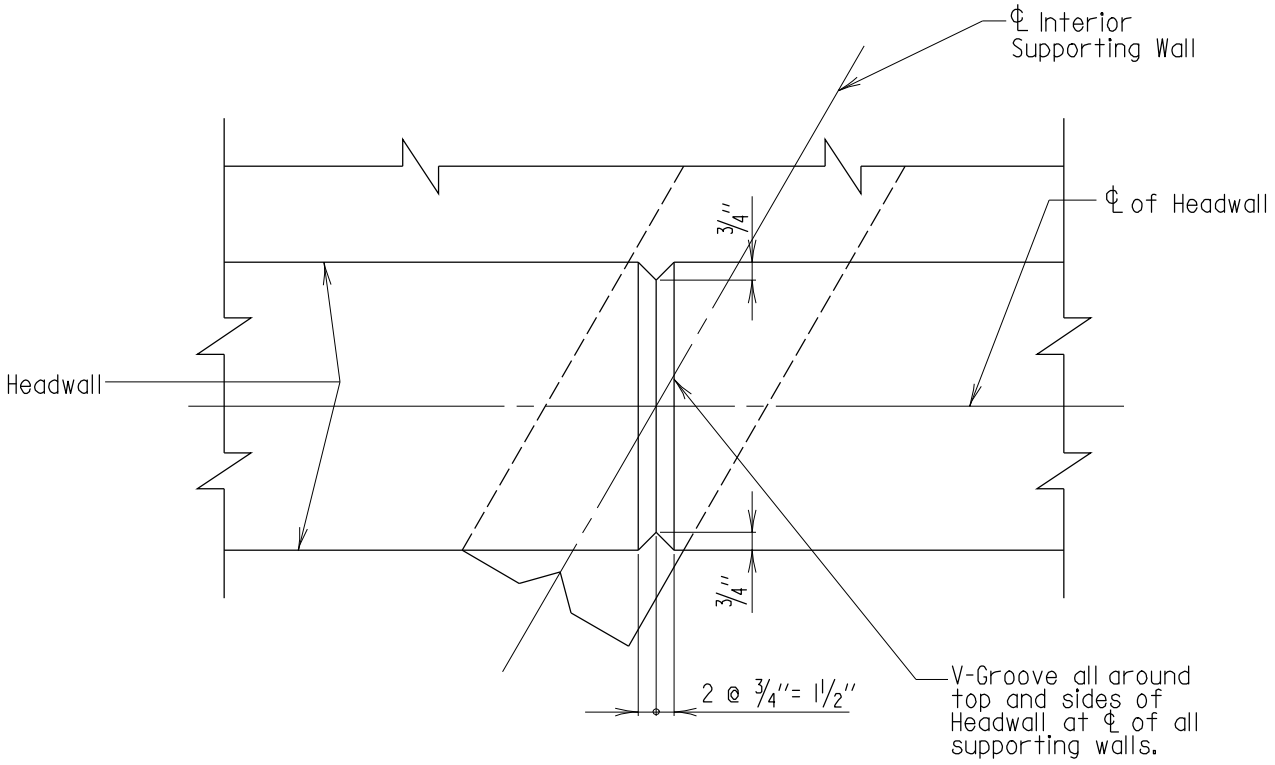
FHWA APPROVAL
DATE: 8-24-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

BOX CULVERT
HEADWALL AND TOEWALL DETAILS

STANDARD NO. BC(6.01)-75-1 SHEET 1 OF 1

BOX CULVERT



PLAN

Scale: 1 1/2"=1'-0"

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 6/20/75

REVISIONS	
SHA	FHWA

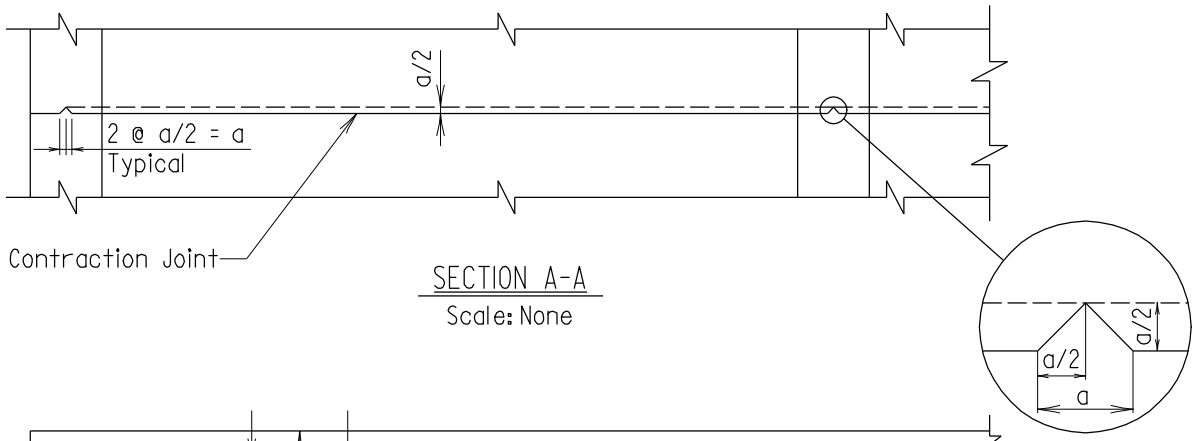
FHWA APPROVAL
DATE: 8-24-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

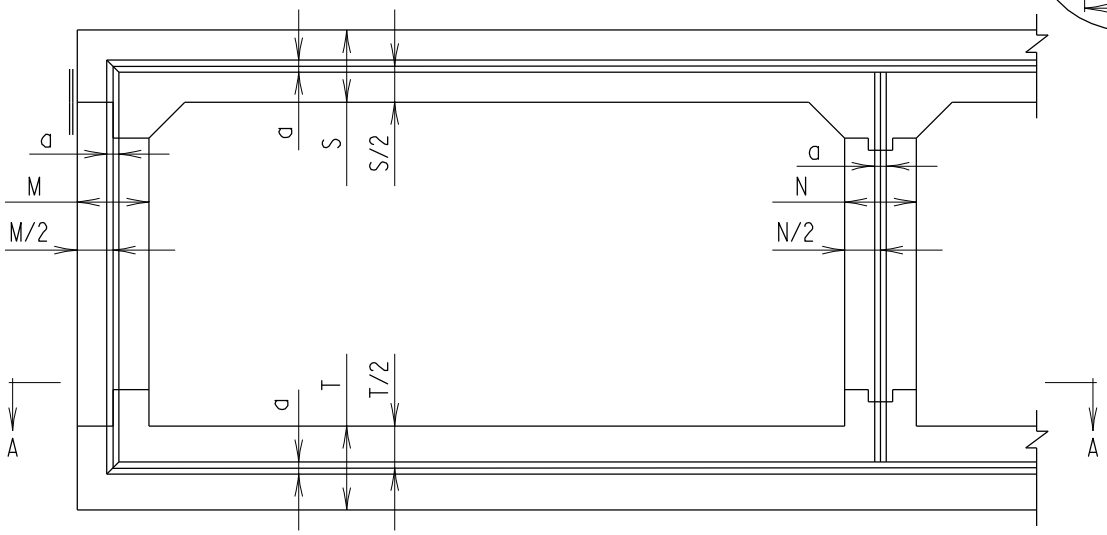
HEADWALL FOR MULTI-CELLED BOX CULVERT GROOVE DETAILS

STANDARD NO. BC(6.02)-75-6 SHEET 1 OF 1

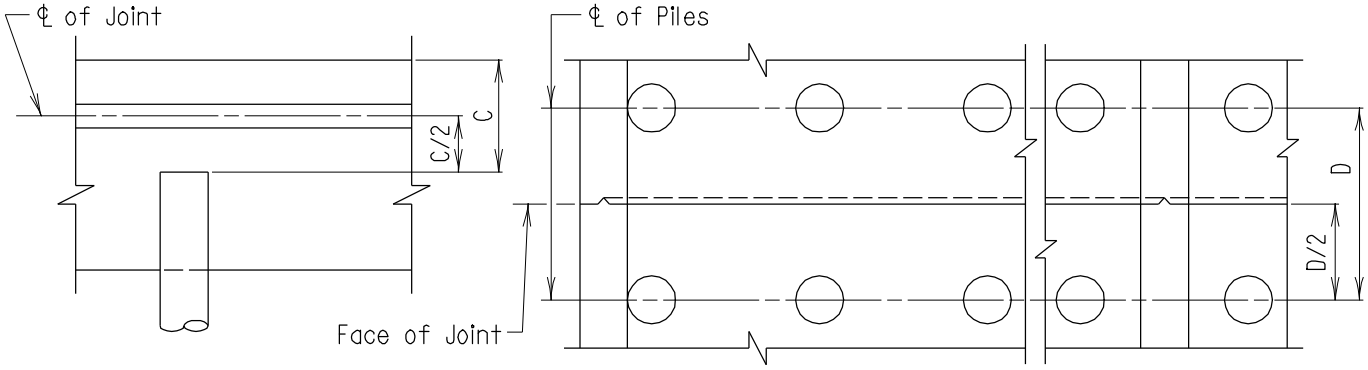
BOX CULVERT



SECTION A-A
Scale: None



ELEVATION
Scale: None



M,N,S,T	Key Size	
	a	a/2
Less than 12"	3"	1½"
12" to 18"	4"	2"
18" or over	6"	3"

ELEVATION
VERTICAL LOCATION OF
KEY WHEN PILES ARE USED
Scale: None

PLAN
HORIZONTAL LOCATION OF
KEY WHEN PILES ARE USED
Scale: None

Notes:
1. Reinforcing steel not to pass through contraction joint.
2. Full face of contraction joint to be dampproofed.
3. When piles are utilized, key in bottom shall be placed midway between top of bottom slab and top of pile vertically, and between rows of piles horizontally. (See Above)

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 6/20/75

REVISIONS	
SHA	FHWA
5-26-92	·
11-17-97	·
·	·
·	·

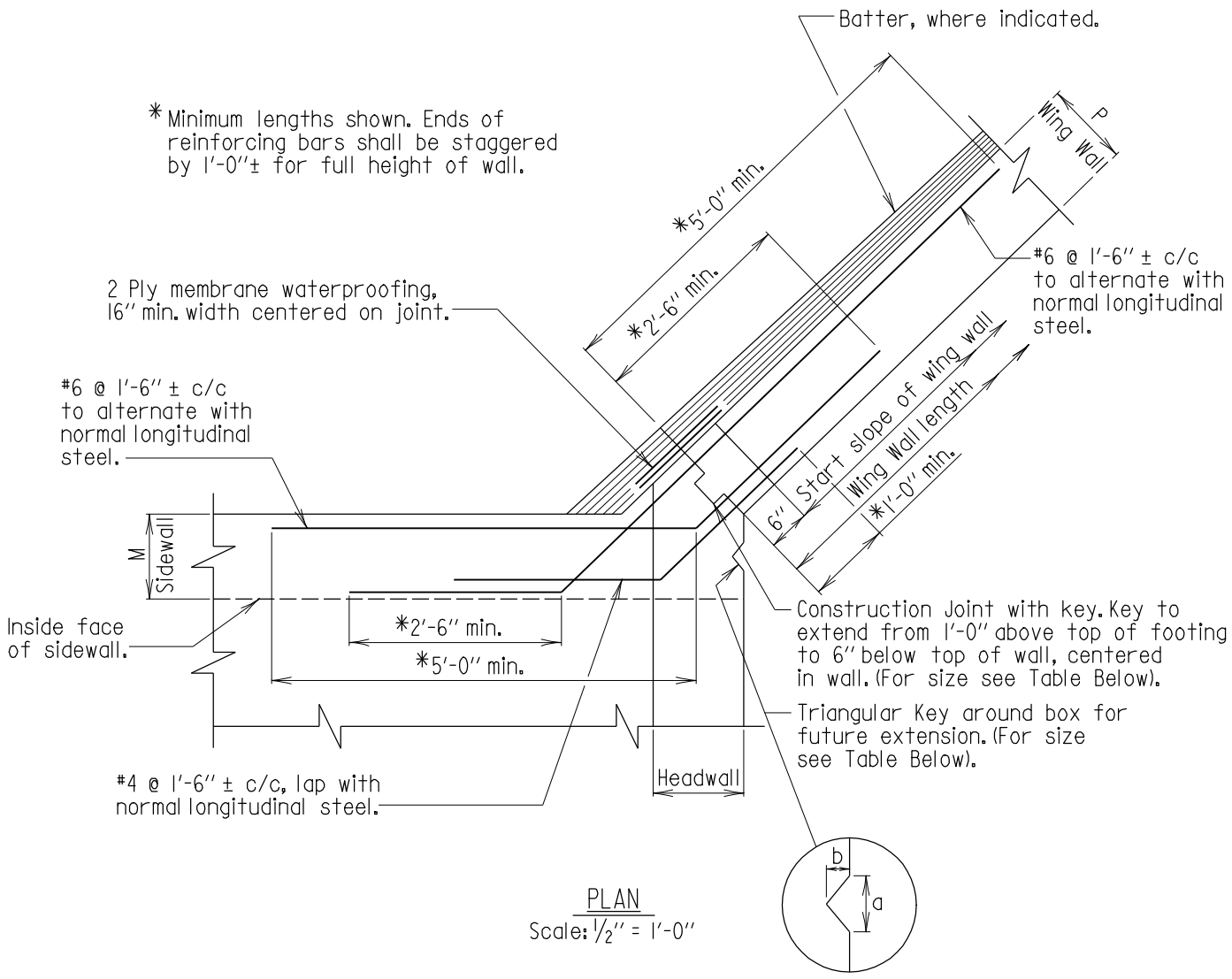
FHWA APPROVAL
DATE: 11-9-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

CONTRACTION JOINT FOR BOX CULVERT BARREL

STANDARD NO. BC(6.03)-75-9 SHEET 1 OF 1

BOX CULVERT



PLAN

Scale: 1/2" = 1'-0"

M or P	Trianglar Key Size		Wing Wall Key Size
	a	b	
Less than 12"	3"	1 1/2"	3" x 1 1/2"
12" to 18"	4"	2"	4" x 2"
18" or over	6"	3"	6" x 3"

Notes:
1. Normal reinforcing steel not shown.
2. All keys are nominal size.
3. This joint detail to be used for all walls less than 15' in length.

APPROVAL
E.S. Freedom DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 6/20/75

REVISIONS	
SHA	FHWA
8-1-85	6-8-90
5-19-93	·
7-15-94	·
10-9-07	·

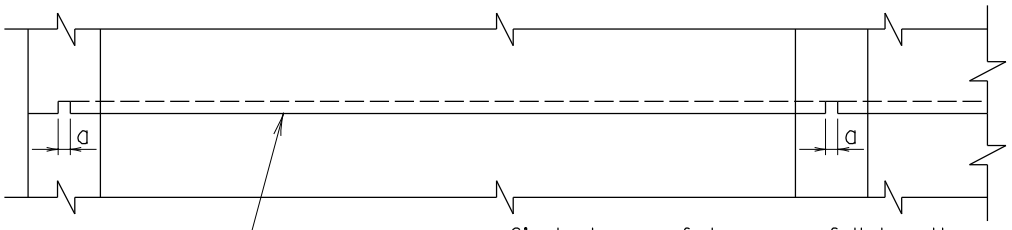
FHWA APPROVAL
DATE: 11-9-76

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

BOX CULVERT WING WALL CONSTRUCTION JOINT

STANDARD NO. BC(6.04)-75-10 SHEET 1 OF 1

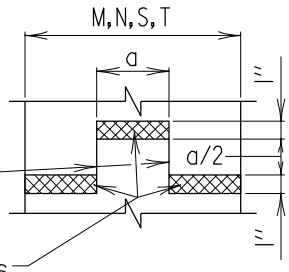
BOX CULVERT

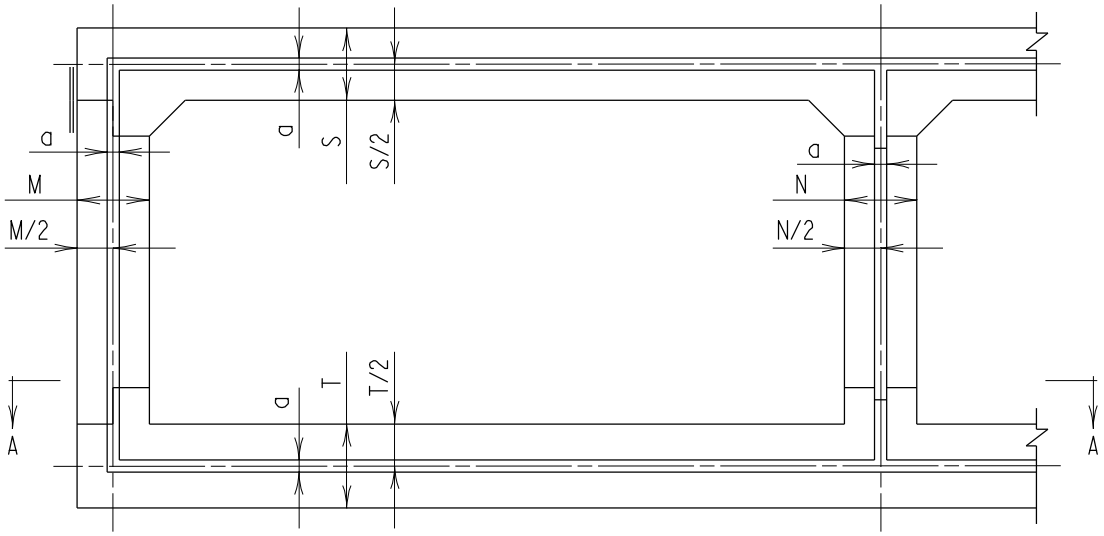


SECTION A-A
Scale: None

Single layer of tarpaper full length of key. Fasten to concrete with asphaltic cement.

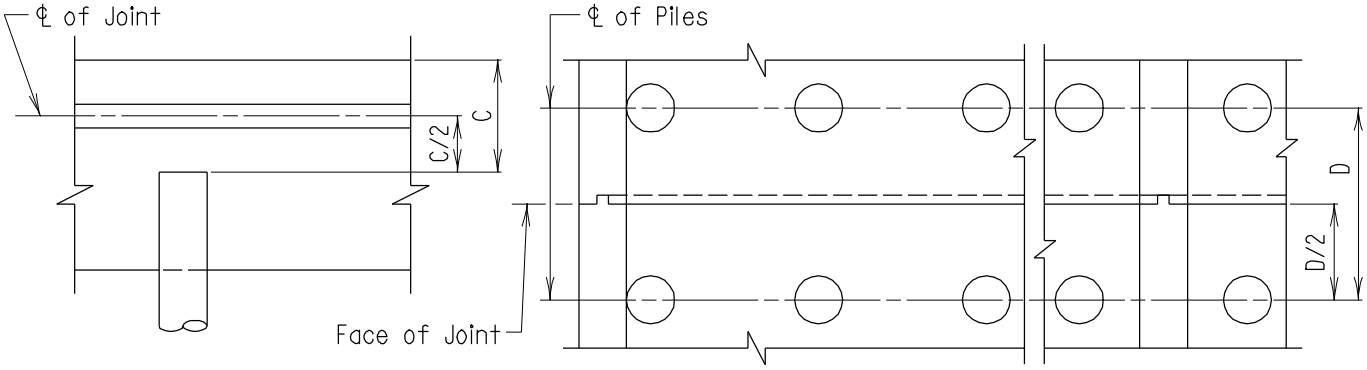
1" Sponge type expansion joint filler material, full length of key. Fasten to one face with copper nails.





TYPICAL SECTION OF WALLS AND SLABS
Scale: None

ELEVATION
Scale: None



M,N,S,T	Key Size	
	a	a/2
Less than 12"	3"	1½"
12" to 18"	4"	2"
18" or over	6"	3"

ELEVATION
VERTICAL LOCATION OF KEY WHEN PILES ARE USED
Scale: None

PLAN
HORIZONTAL LOCATION OF KEY WHEN PILES ARE USED
Scale: None

Notes:
1. Reinforcing steel not to pass through joint.
2. When piles are utilized, key in bottom shall be placed midway between top of bottom slab and top of pile vertically, and between rows of piles horizontally. (See Above)
3. All keys are nominal size.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 2/23/77

REVISIONS	
SHA	FHWA
5-25-92	·
11-17-97	·
1-22-01	·
3-22-06	·

FHWA APPROVAL
DATE: 2-25-77

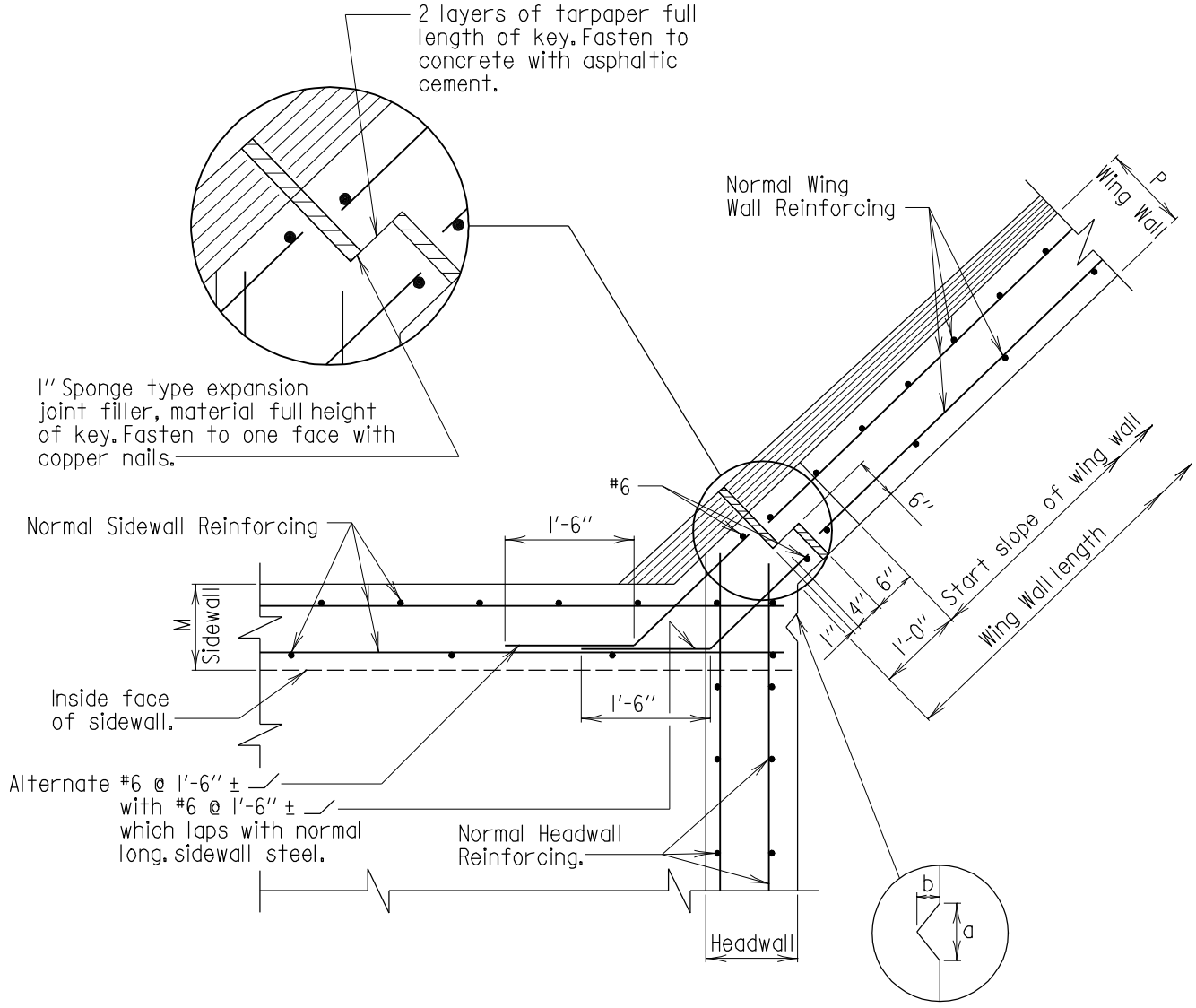
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

EXPANSION JOINT FOR BOX CULVERT BARREL

STANDARD NO. BC(6.05)-76-36

SHEET 1 OF 1

BOX CULVERT



PLAN

Scale: 1/2" = 1'-0"

M or P	Triangular Key Size	
	a	b
Less than 12"	3"	1 1/2"
12" to 18"	4"	2"
18" or over	6"	3"

Notes:
1. Reinforcing steel not to pass through joint.
2. All keys are nominal size.
3. Expansion joint to extend from top of footing to top of wall.
4. This joint detail to be used for all walls greater than 15' in length.

APPROVAL	
E.S. Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.	
DATE: 2/23/77	
REVISIONS	
SHA	FHWA
11-17-97	·
3-22-06	·
1-22-01	·
10-9-07	·

FHWA APPROVAL
DATE: 2-25-77

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

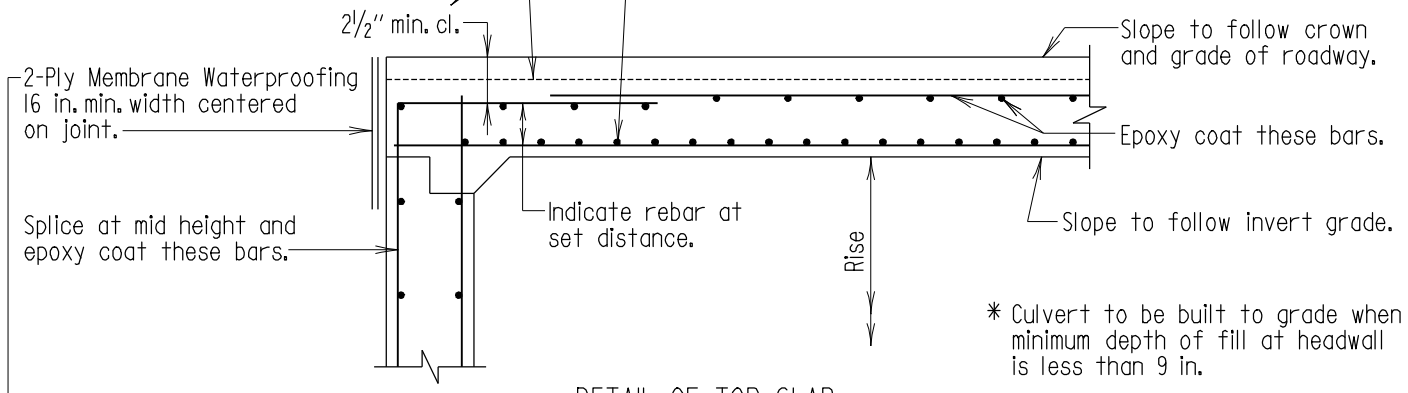
BOX CULVERT WING WALL EXPANSION JOINT

STANDARD NO. BC(6.06)-76-37 SHEET 1 OF 1

BOX CULVERT

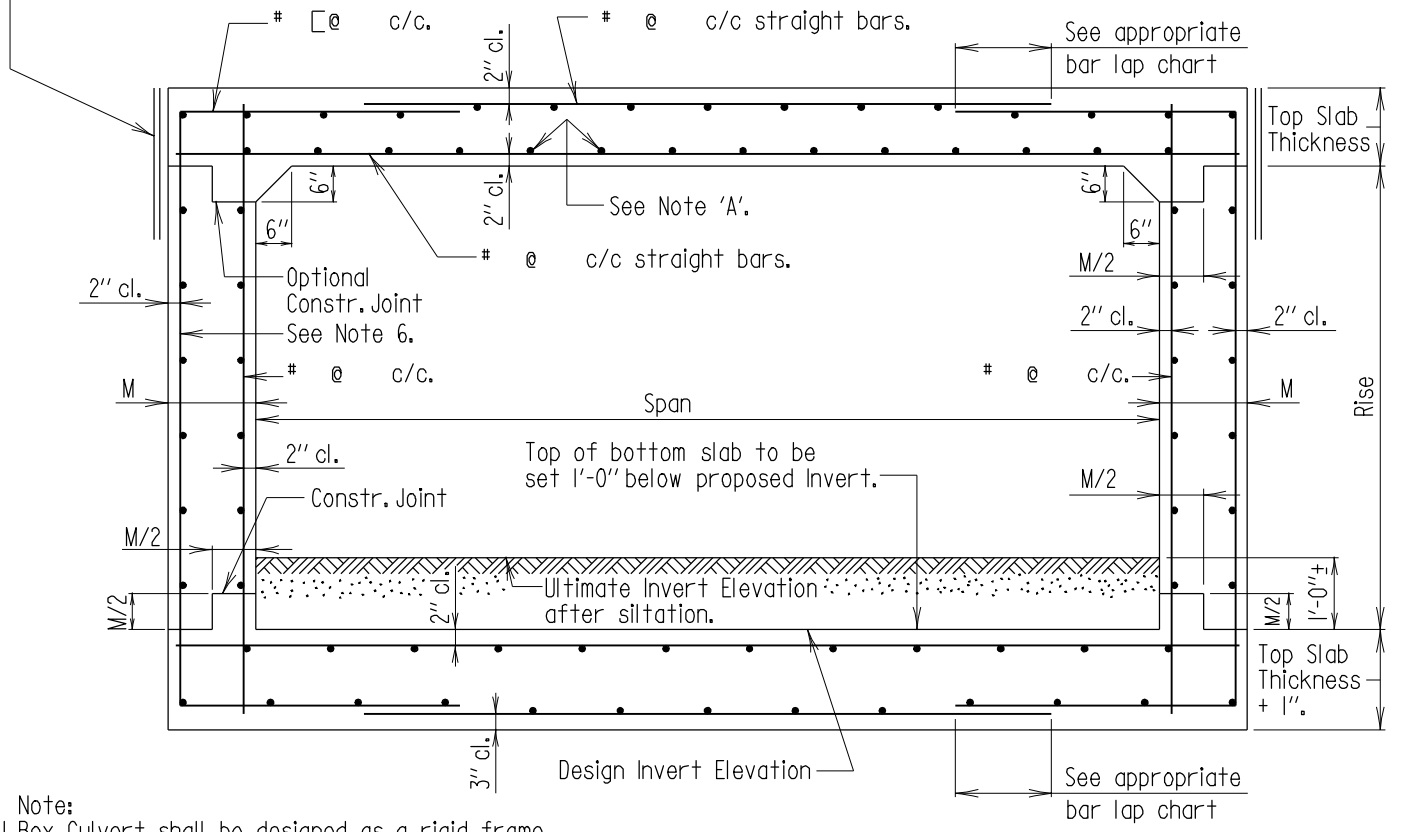
If minimum clearance exceeds 6 in., then an additional mat of epoxy coated 6 x 6 - W2.9 x W2.9 welded wire fabric shall be placed 3 in. clear from finished top of slab for full length and width of culvert.

Note : A
When depth of fill over top slab is equal to or less than 2'-0" the longitudinal bars in the bottom of the top slab shall be # @ c/c ±. All other longitudinal bars to be #4 @ 1'-6" c/c ±.



* Culvert to be built to grade when minimum depth of fill at headwall is less than 9 in.

DETAIL OF TOP SLAB WHEN CULVERT IS BUILT TO GRADE *



Note:
1. Box Culvert shall be designed as a rigid frame.
2. Reinforcing in bottom slab same as top slab except for any longitudinal steel added when depth of fill on top slab is 2'-0" or less.
3. Minimum thickness of sidewalls to be 11 in.
4. All longitudinal bars to be #4's spaced as shown with a maximum spacing of 1'-6" c/c; except for any additional steel that may be required when depth of fill on top slab is 2'-0" or less.
5. If piles are used; bottom slab shall be increased 9" in thickness and piles shall be equally spaced in the transverse direction as well as equally spaced in the longitudinal direction.
6. If rise exceeds 10'-0", this bar may be lapped at mid height at Contractors option.

TYPICAL SECTION

7. If bottom slab exceeds 18" in thickness, longitudinal bars shall become #4's @ 1'-0" max.
8. Concrete cover shall be increased from the cover indicated in typical section to 4" clear for all surfaces with direct exposure to salt water.

FOR OFFICE USE ONLY

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 2/23/77

REVISIONS	
SHA	FHWA
2-4-94	·
7-15-94	·
1-22-01	·
10-9-07	·

FHWA APPROVAL
DATE: 2-25-77

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

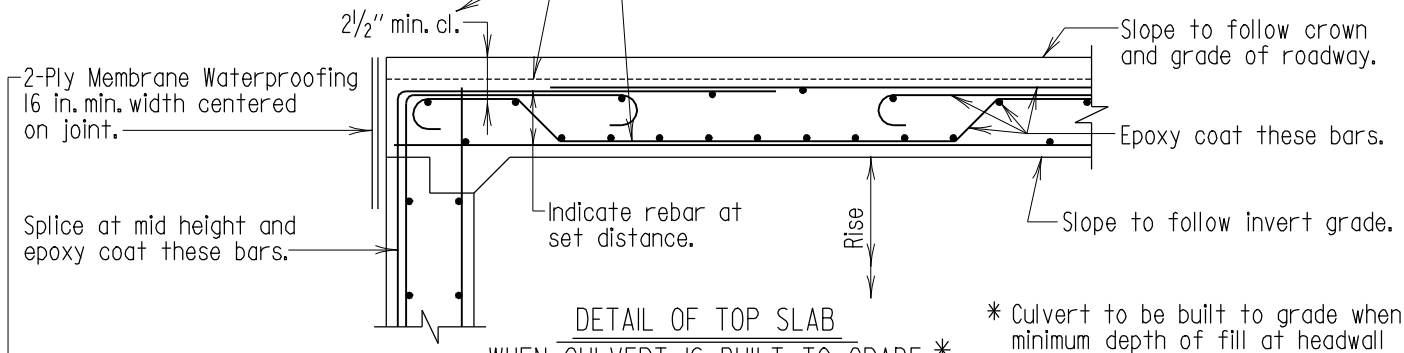
TYPICAL SECTION FOR SINGLE BOX CULVERT

STANDARD NO. BC(6.07)-76-38 SHEET 1 OF 1

BOX CULVERT

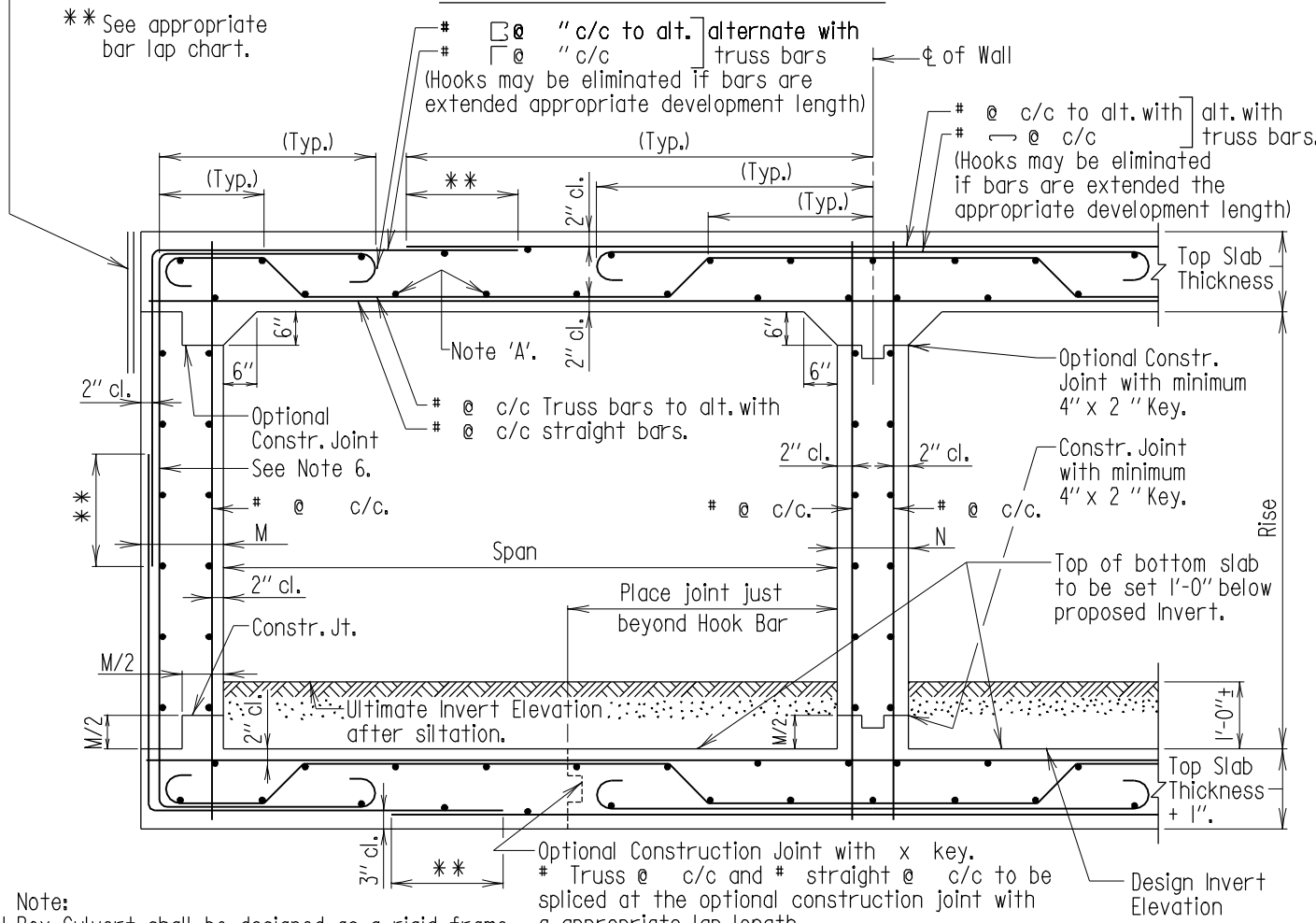
If minimum clearance exceeds 6 in., then an additional mat of epoxy coated 6 x 6 - W2.9 x W2.9 welded wire fabric shall be placed 3 in. clear from finished top of slab for full length and width of culvert.

Note : A
When depth of fill over top slab is equal to or less than 2'-0" the longitudinal bars in the bottom of the top slab shall be # @ c/c ±. All other longitudinal bars to be #4 @ 1'-6" c/c ±.



DETAIL OF TOP SLAB WHEN CULVERT IS BUILT TO GRADE *

* Culvert to be built to grade when minimum depth of fill at headwall is less than 9 in.



TYPICAL SECTION

Note:
1. Box Culvert shall be designed as a rigid frame.
2. Reinforcing in bottom slab same as top slab except for any longitudinal steel added when depth of fill on top slab is 2'-0" or less.
3. Minimum thickness of sidewalls to be 11 in.
4. All longitudinal bars to be #4's spaced as shown with a maximum spacing of 1'-6" c/c; except for any additional steel that may be required when depth of fill on top slab is 2'-0" or less.
5. If piles are used; bottom slab shall be increased 9" in thickness and piles shall be equally spaced in the transverse direction as well as equally spaced in the longitudinal direction.
6. If rise exceeds 10'-0", this bar may be lapped at mid height at Contractors option.
7. If bottom slab exceeds 18" in thickness, longitudinal bars shall become #4's @ 1'-0" max.
8. Concrete cover shall be increased from the cover indicated in typical section to 4" clear for all surfaces with direct exposure to salt water.

FOR OFFICE USE ONLY

APPROVAL
E.S. Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 2/23/77

REVISIONS	
SHA	FHWA
2-4-94	·
7-15-94	·
1-22-01	·
10-9-07	·

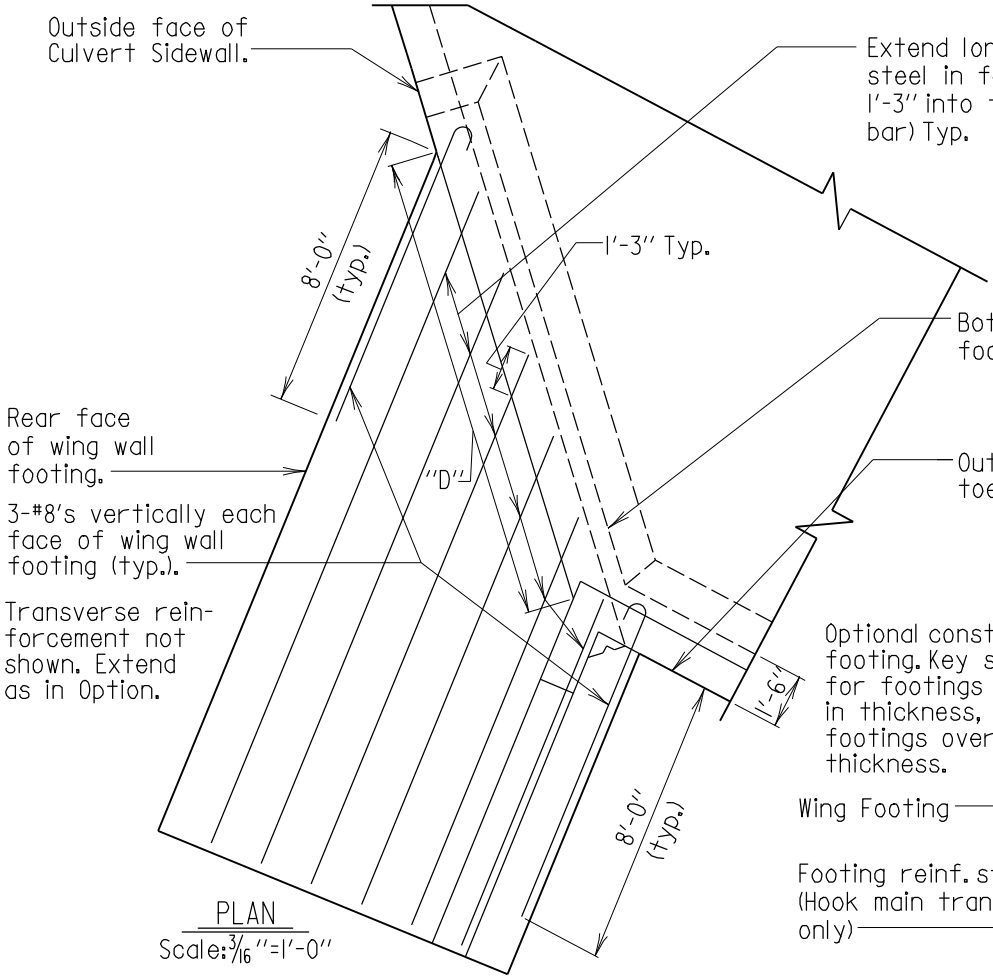
FHWA APPROVAL
DATE: 2-25-77

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

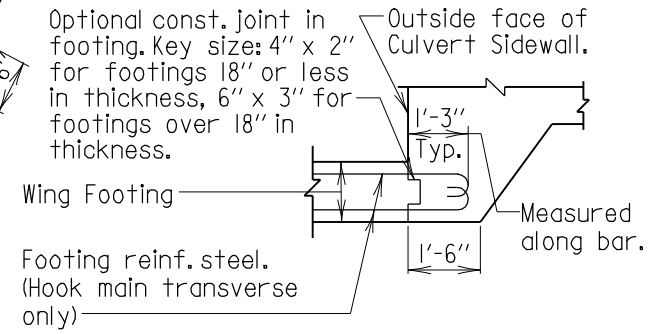
TYPICAL SECTION
MULTI-CELLED BOX CULVERT

STANDARD NO. BC(6.08)-76-39 SHEET 1 OF 1

BOX CULVERT

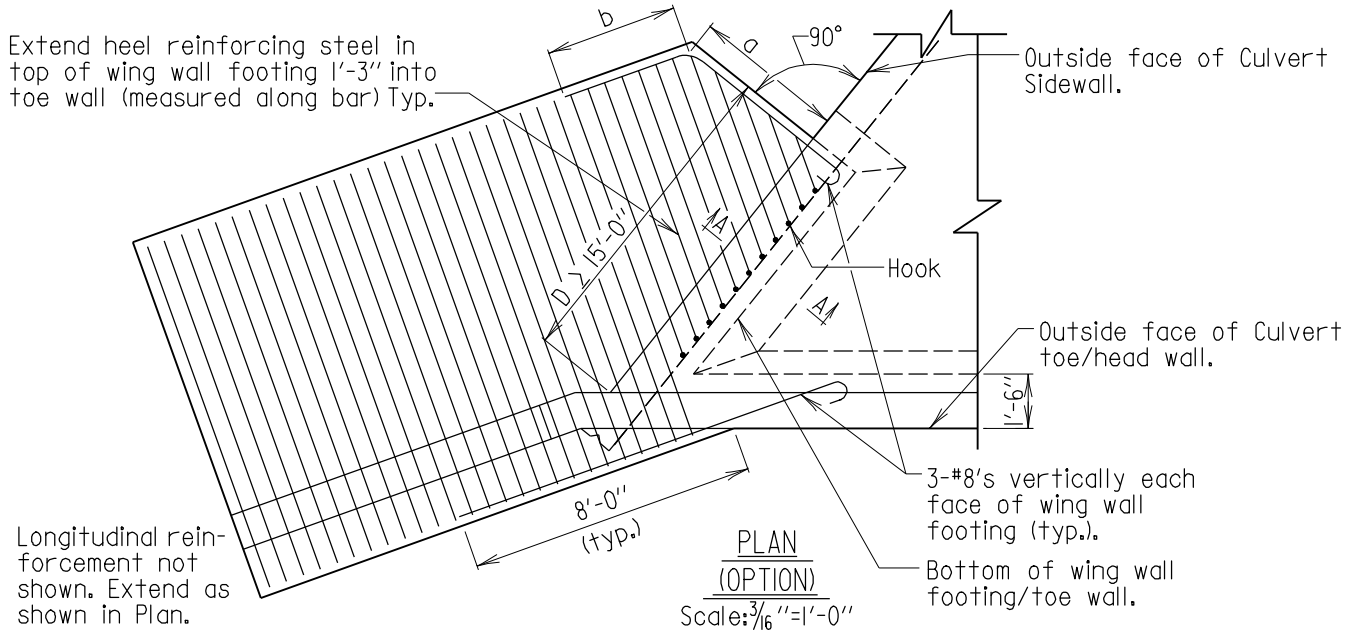


PLAN
Scale: 3/16" = 1'-0"



SECTION A-A
Scale: None

Note:
a + b = 8'-0"



PLAN
(OPTION)
Scale: 3/16" = 1'-0"

Note:
1. When the distance measured along the outside face of culvert, between the back of headwall/wing wall and the rear face of wing wall footing, (shown as D), exceeds 15 ft. the Contractor has the option of installing the footing as shown in Option.
2. Culvert and toe wall reinforcing steel not shown.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 5/3/89

REVISIONS	
SHA	FHWA
1-22-01	·
10-9-07	·
·	·
·	·

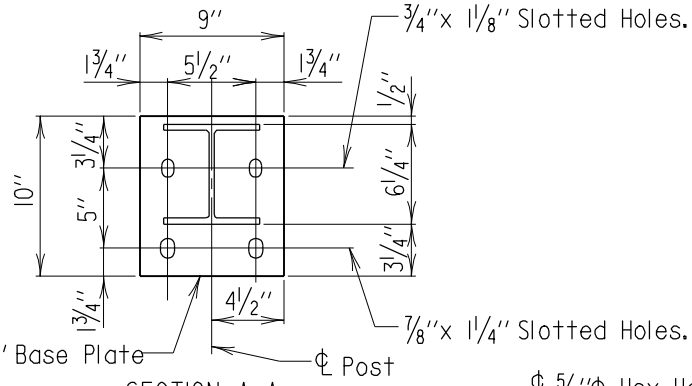
FHWA APPROVAL		
DATE: 6-8-90	·	·

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

TIE-IN DETAIL FOR BOX CULVERT BOTTOM SLAB AND WING WALL FOOTING

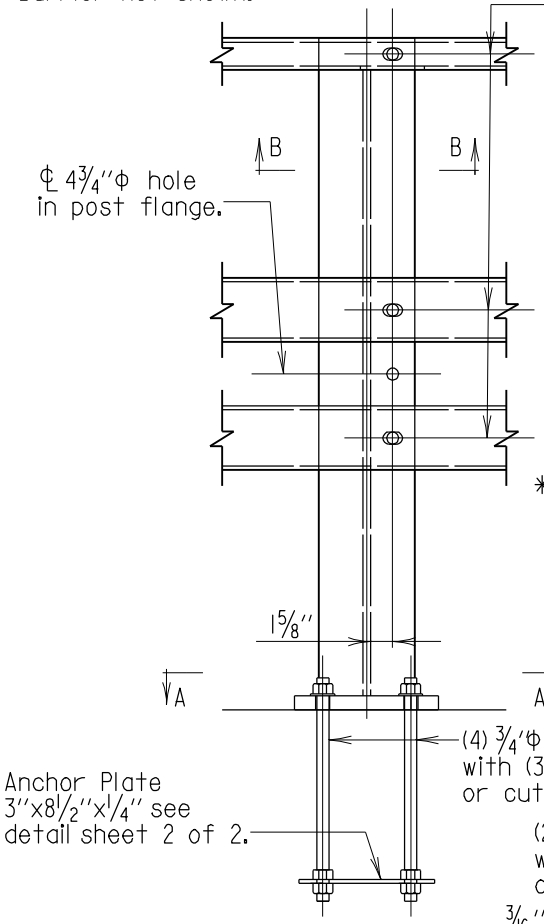
STANDARD NO. BC(6.09)-89-200 SHEET 1 OF 1

BOX CULVERT

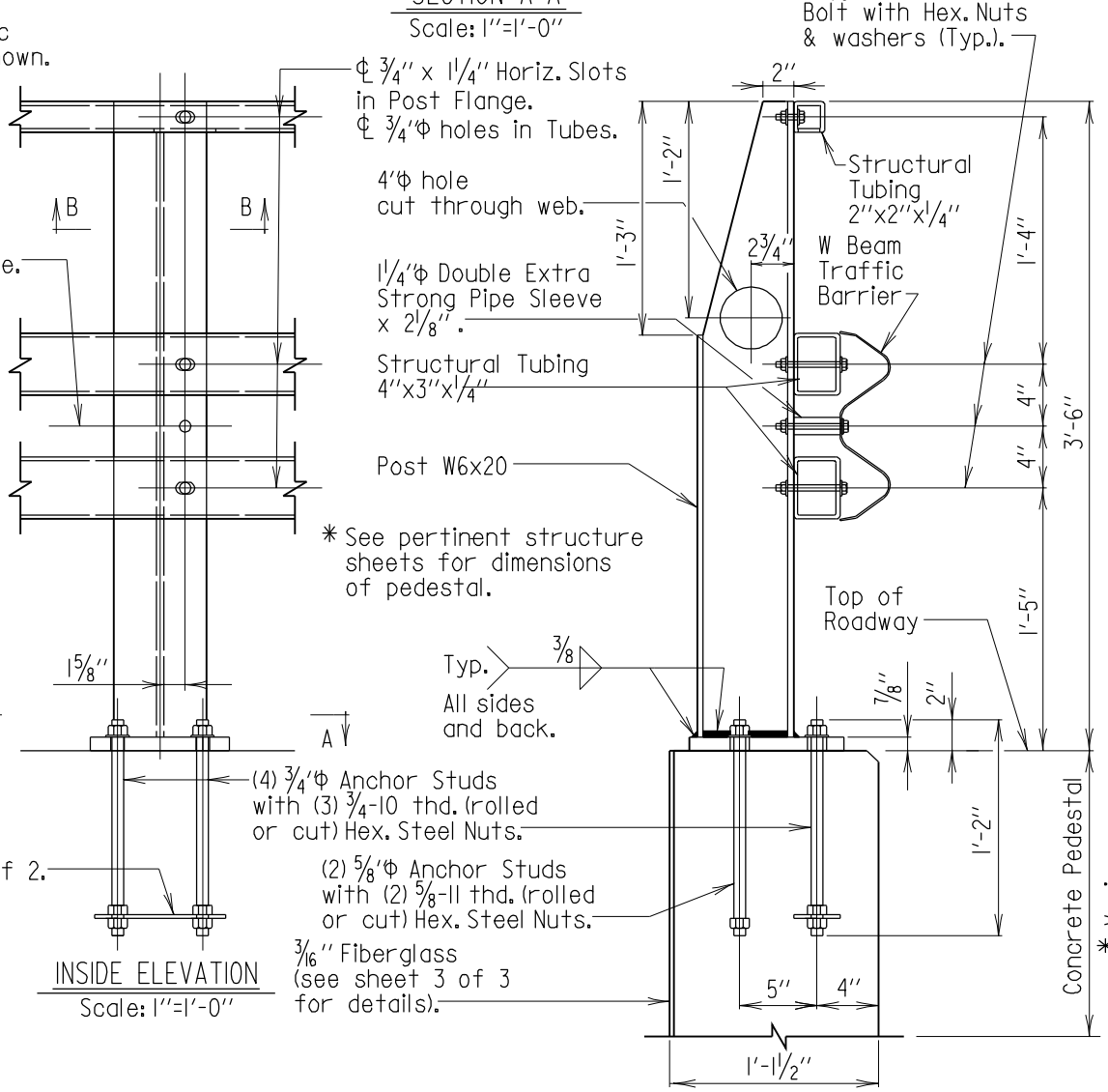


SECTION A-A
Scale: 1"=1'-0"

Note:
W Beam Traffic Barrier not shown.



INSIDE ELEVATION
Scale: 1"=1'-0"



SECTION
Scale: 1"=1'-0"

Notes:
1. Panel lengths of structural tubing members shall be attached continuously to a minimum of three posts except at abutments with expansion joints.
2. All steel components shall be galvanized, after fabrication, unless otherwise shown on Plans.
3. Structural tubing section shall meet ASTM A 572 Grade 50. All other steel except bolts shall meet ASTM A 36.
4. All anchor studs and nuts shall meet ASTM A 325.
5. Maximum post spacing 6'-3".
6. Posts shall be set vertical for level or low side roadway and perpendicular to high side superelevated roadway.
7. Fiberglass to be used only when indicated on pertinent structure sheets.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

REVISIONS	
SHA	FHWA

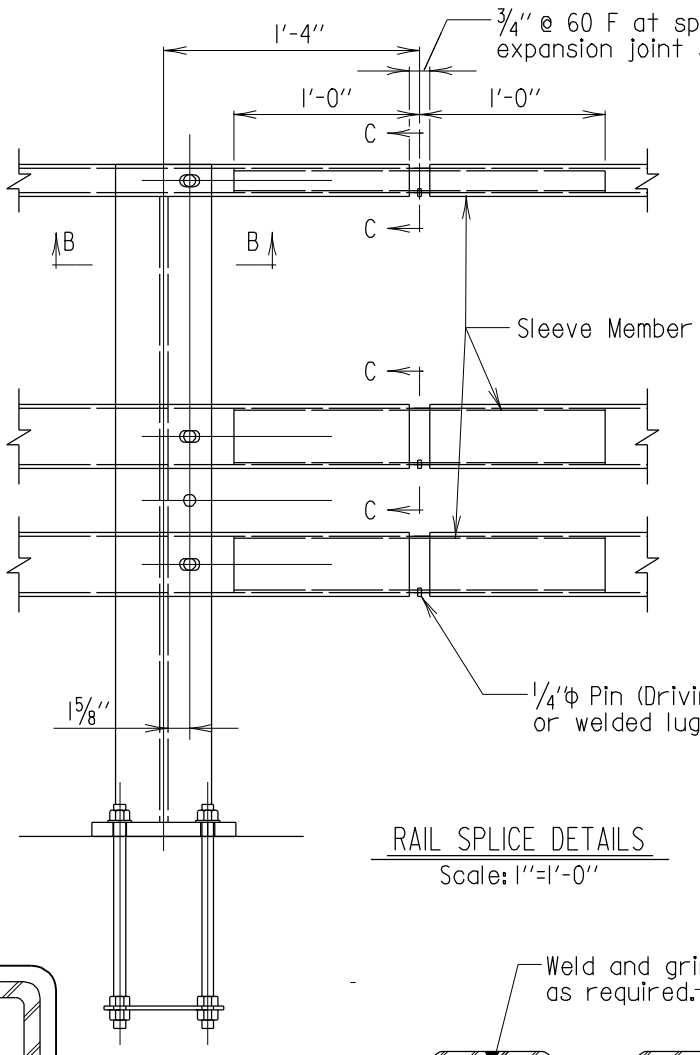
FHWA APPROVAL
DATE:

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL FOR STRUCTURES

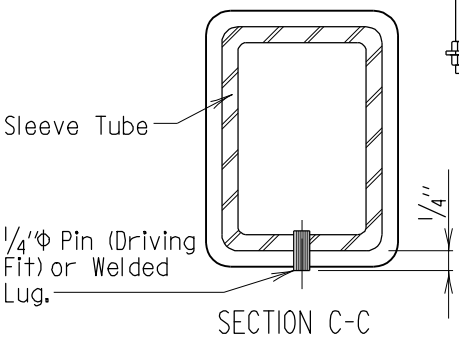
BOX CULVERT

STANDARD NO. BC(6.10)-90-217 SHEET 1 OF 3

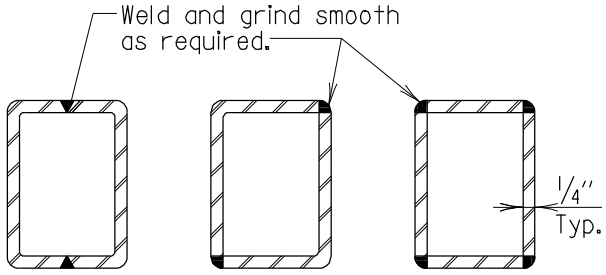


Note:
W Beam Traffic Barrier not shown.

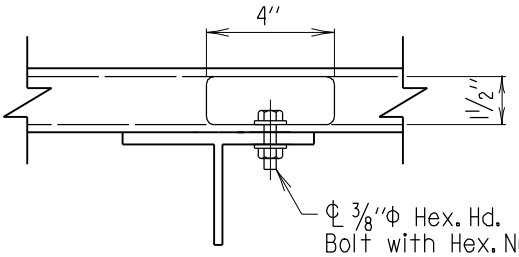
RAIL SPLICE DETAILS
Scale: 1"=1'-0"



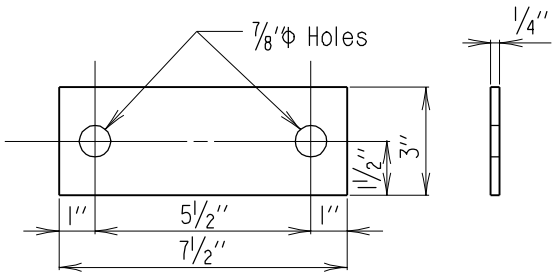
SECTION C-C
Scale:None



SLEEVE FABRICATION OPTIONS
Scale:None



SECTION B-B
Scale:None



ANCHOR PLATE
Scale: None

Note:
The difference between the outside dimensions of the sleeve and the inside dimensions of the rail shall not exceed 1/8" along either axis.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

REVISIONS	
SHA	FHWA

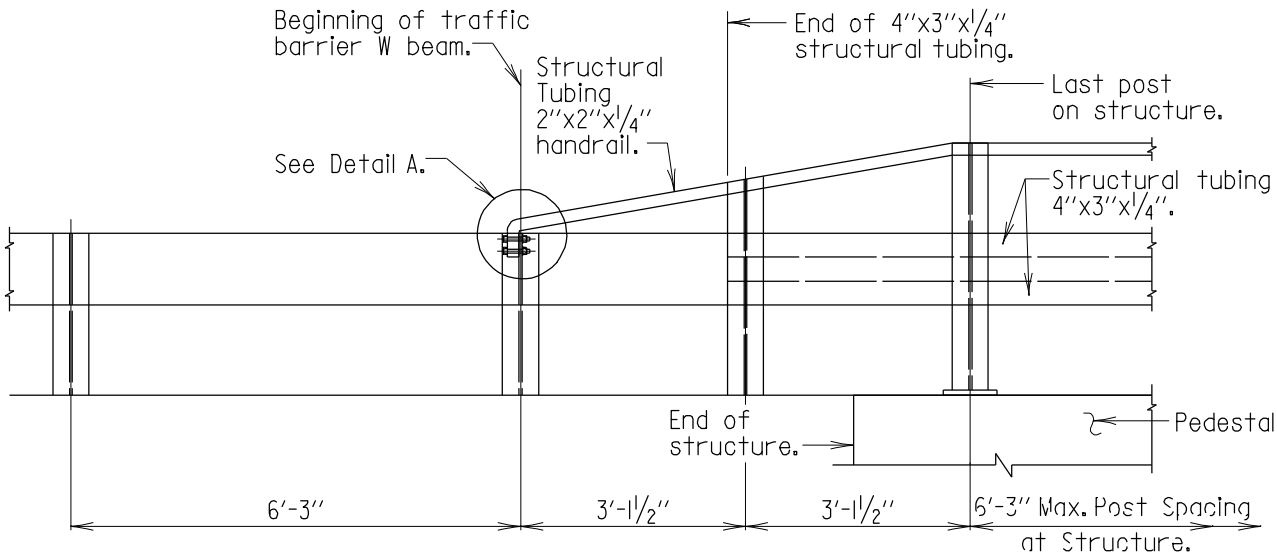
FHWA APPROVAL
DATE:

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

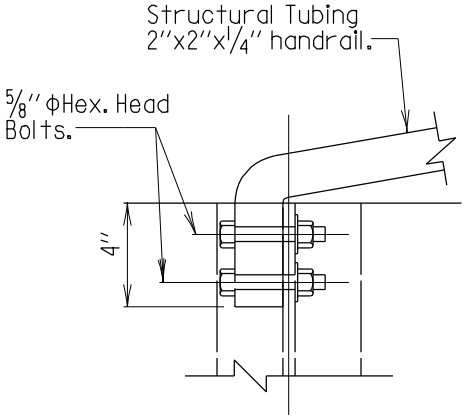
COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL FOR STRUCTURES

STANDARD NO. BC(6.10)-90-217 SHEET 2 OF 3

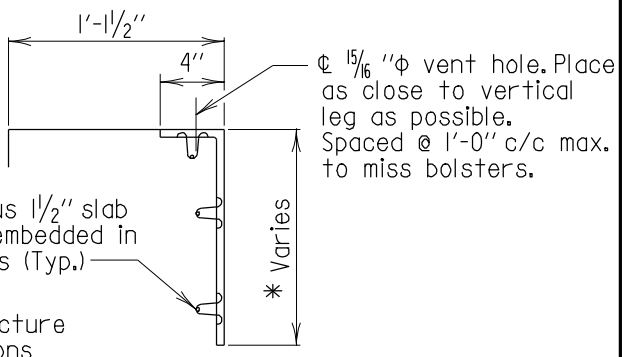
BOX CULVERT



ELEVATION
Scale: 3/8''=1'-0''

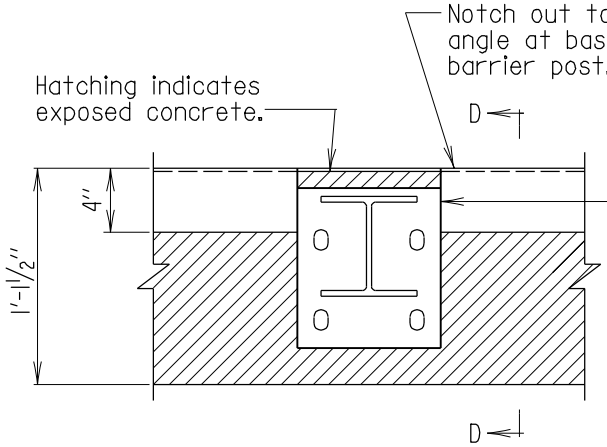


DETAIL A
Scale: 1 1/2''=1'-0''



* See pertinent structure sheets for dimensions of fiberglass.

SECTION D-D
Scale: 1''=1'-0''



FIBERGLASS ANGLE PLAN
Scale: 1''=1'-0''

Fiberglass shall conform to the following requirements :

1. The material shall have a density of 1.25 g/cm^3 min., as determined by A.S.T.M. D 792. It shall not have an absorption of more than 1.0 percent as measured by A.S.T.M. D 570.
2. The tensile strength of the material shall be measured in the longitudinal and transverse directions on specimens cut to an approximate size of 1/2'' x 6''. When tested in accordance with A.S.T.M. D 638, the average of 5 specimens in each direction shall yield a 10,000 p.s.i. minimum strength.
3. The thickness shall be 3/16'' (+1/16'' - 0'') unless otherwise noted. The surfaces of the fiberglass designed to bond with other materials shall be free of bond inhibiting agents.
4. The color shall match Federal Standard 595-26622 gray.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

REVISIONS	
SHA	FHWA

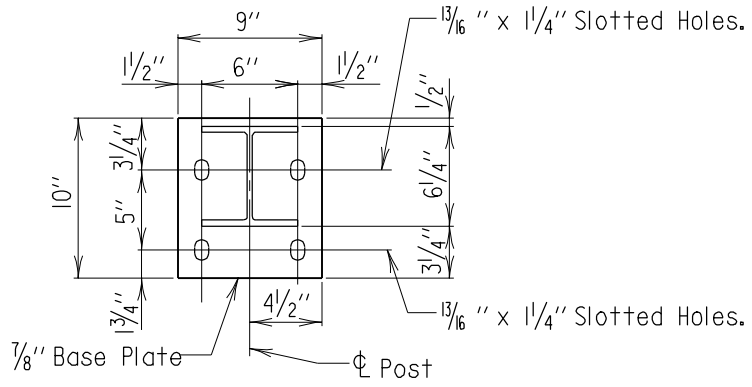
FHWA APPROVAL
DATE:

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

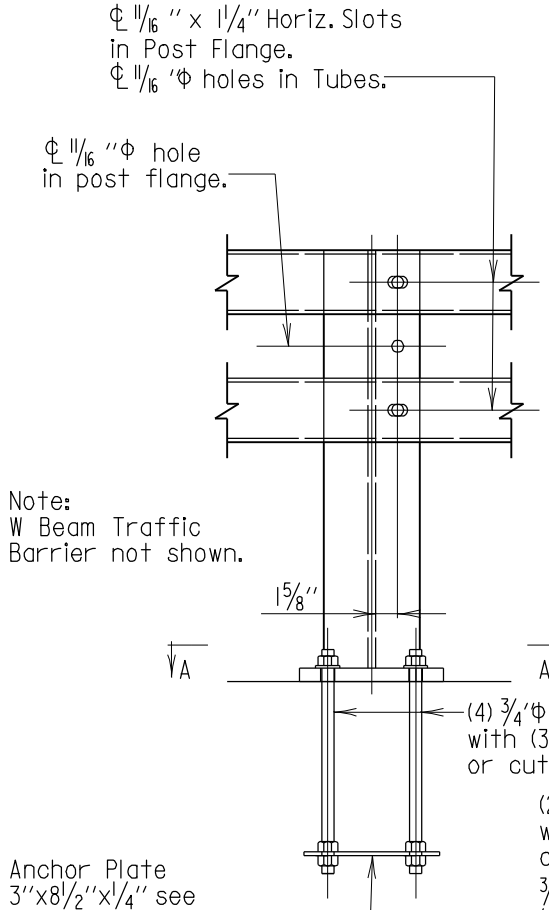
COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL FOR STRUCTURES

STANDARD NO. BC(6.10)-90-217 SHEET 3 OF 3

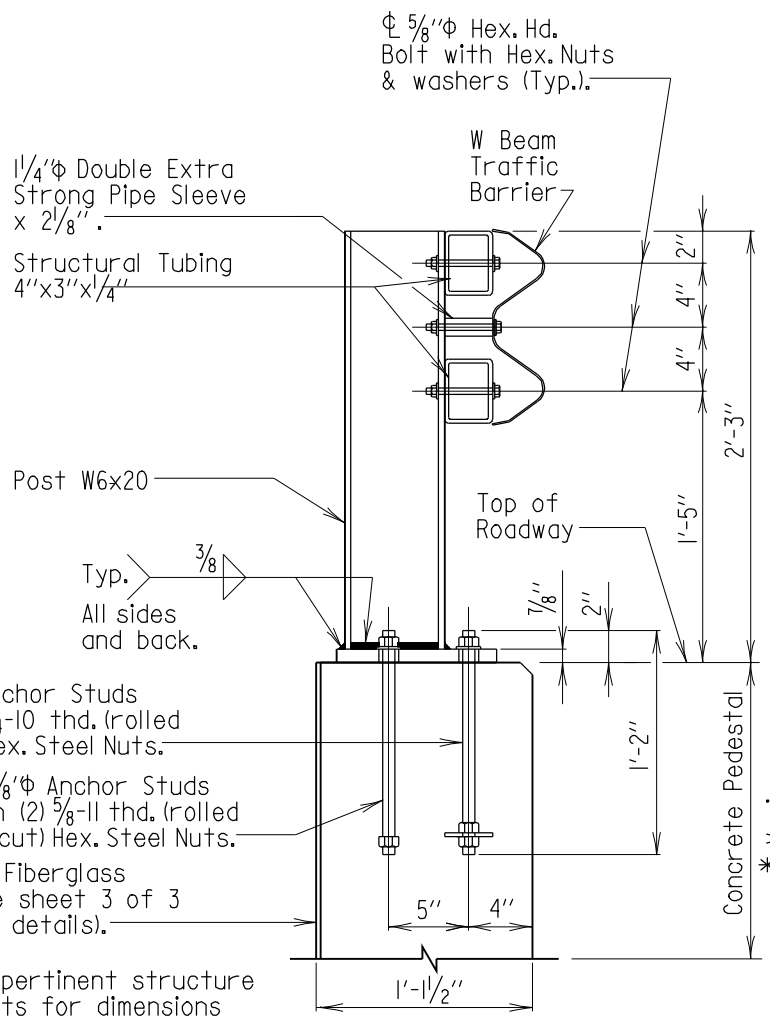
BOX CULVERT



SECTION A-A
Scale: 1''=1'-0''



INSIDE ELEVATION
Scale: 1''=1'-0''



* See pertinent structure sheets for dimensions of pedestal.

SECTION
Scale: 1''=1'-0''

Notes:
1. Panel lengths of structural tubing members shall be attached continuously to a minimum of three posts except at abutments with expansion joints.
2. All steel components shall be galvanized, after fabrication, unless otherwise shown on Plans.
3. Structural tubing section shall meet ASTM A 709 Grade 50. All other steel except bolts shall meet ASTM A 709 Grade 36.
4. All anchor studs and nuts shall meet ASTM A 325.
5. Maximum post spacing 6'-3".
6. Posts shall be set vertical for level or low side roadway and perpendicular to high side superelevated roadway.
7. Fiberglass to be used only when indicated on pertinent structure sheets.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

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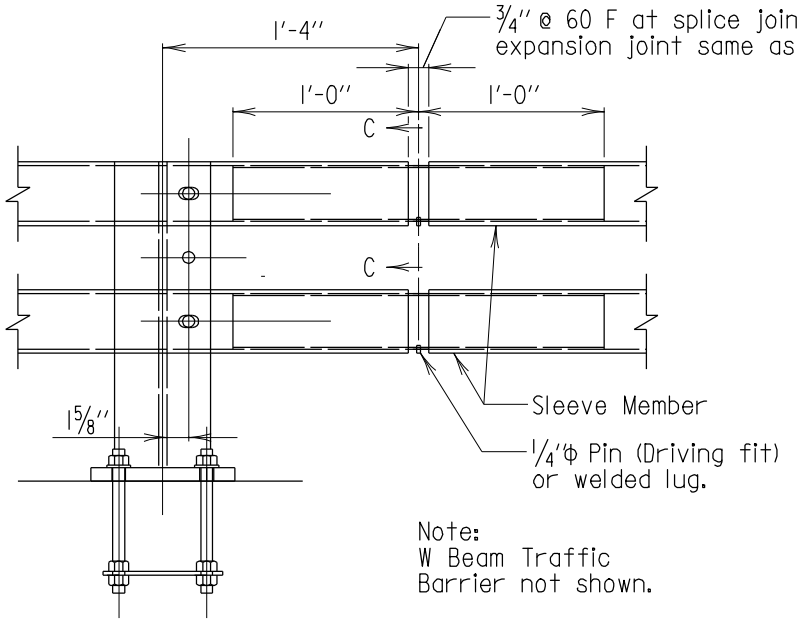
DATE:

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

W BEAM TRAFFIC BARRIER FOR STRUCTURES

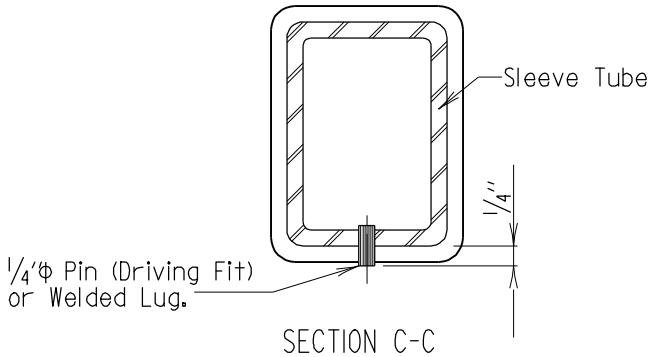
STANDARD NO. BC(6.11)-90-218 SHEET 1 OF 3

BOX CULVERT

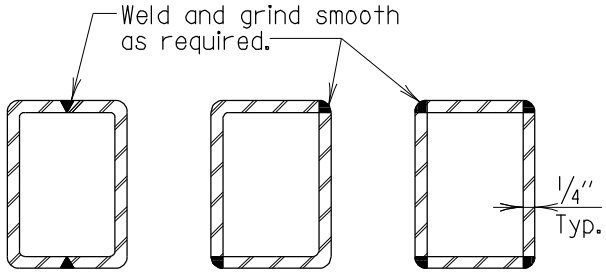


Note:
W Beam Traffic Barrier not shown.

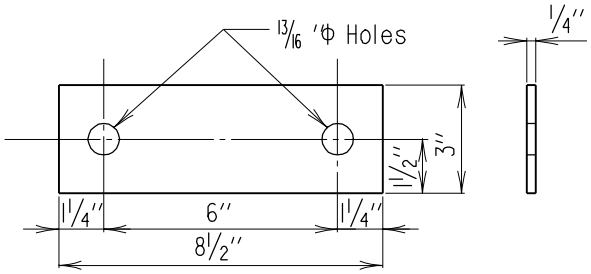
RAIL SPLICE DETAIL
Scale: 1"=1'-0"



SECTION C-C
Scale:None



SLEEVE FABRICATION OPTIONS
Scale:None



ANCHOR PLATE
Scale: None

Note:
The difference between the outside dimensions of the sleeve and the inside dimensions of the rail shall not exceed 1/8" along either axis.

APPROVAL
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DATE: 4/23/90

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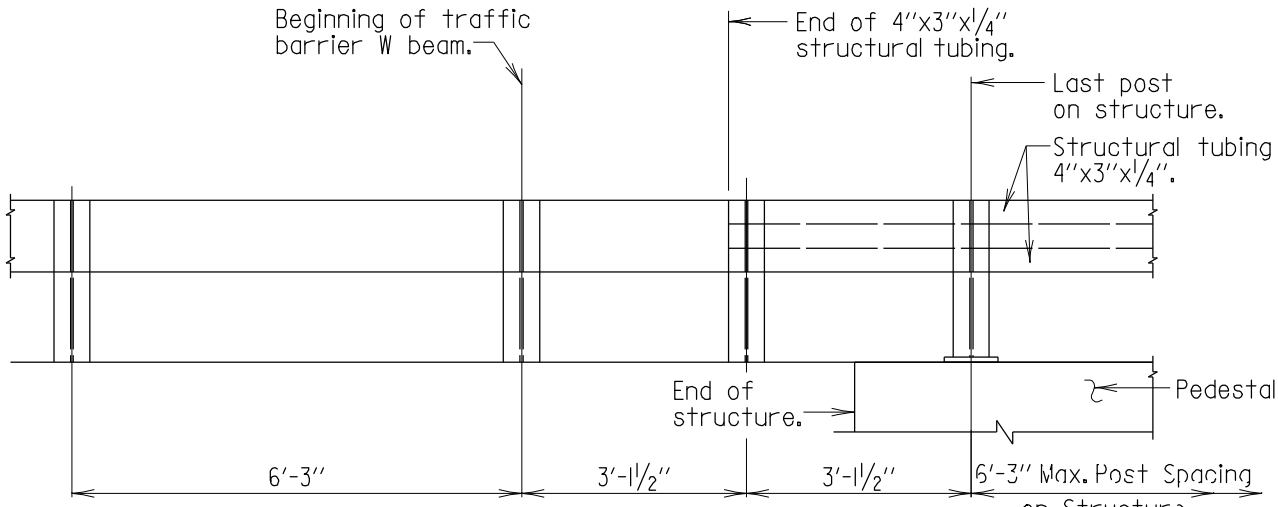
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

W BEAM TRAFFIC BARRIER
FOR STRUCTURES

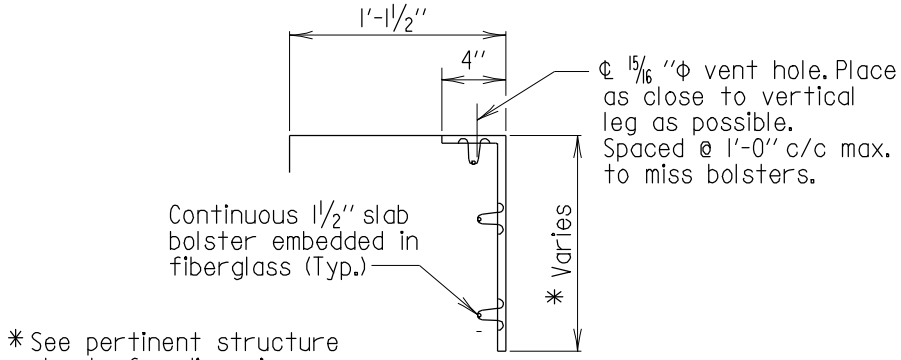
STANDARD NO. BC(6.11)-90-218 SHEET 2 OF 3

BOX CULVERT



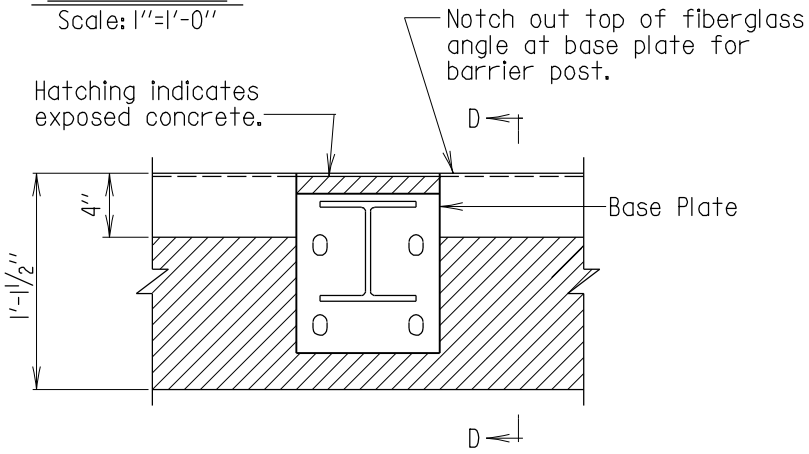
ELEVATION

Scale: 3/8''=1'-0''



SECTION D-D

Scale: 1''=1'-0''



FIBERGLASS ANGLE PLAN

Scale: 1''=1'-0''

Fiberglass shall conform to the following requirements :

1. The material shall have a density of 1.25 g/cm^3 min., as determined by A.S.T.M. D 792. It shall not have an absorption of more than 1.0 percent as measured by A.S.T.M. D 570.
2. The tensile strength of the material shall be measured in the longitudinal and transverse directions on specimens cut to an approximate size of 1/2'' x 6''. When tested in accordance with A.S.T.M. D 638, the average of 5 specimens in each direction shall yield a 10,000 p.s.i. minimum strength.
3. The thickness shall be 3/16'' (+1/16'' - 0'') unless otherwise noted. The surfaces of the fiberglass designed to bond with other materials shall be free of bond inhibiting agents.
4. The color shall match Federal Standard 595-26622 gray.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

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DATE:

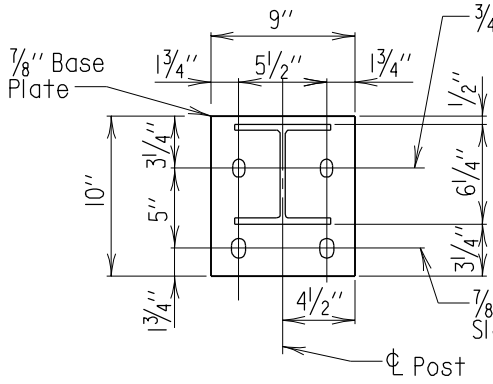
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

W BEAM TRAFFIC BARRIER FOR STRUCTURES

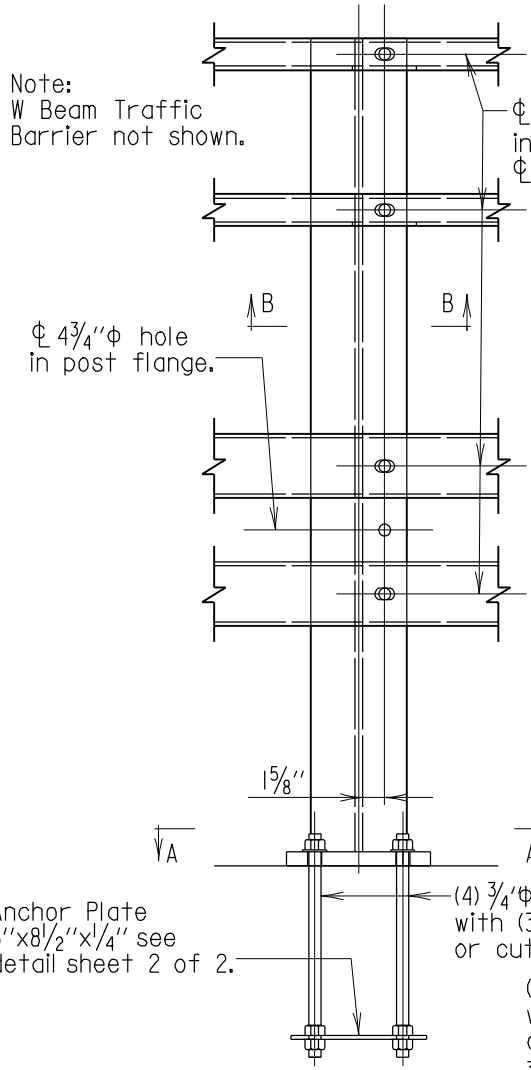
BOX CULVERT

STANDARD NO. BC(6.11)-90-218

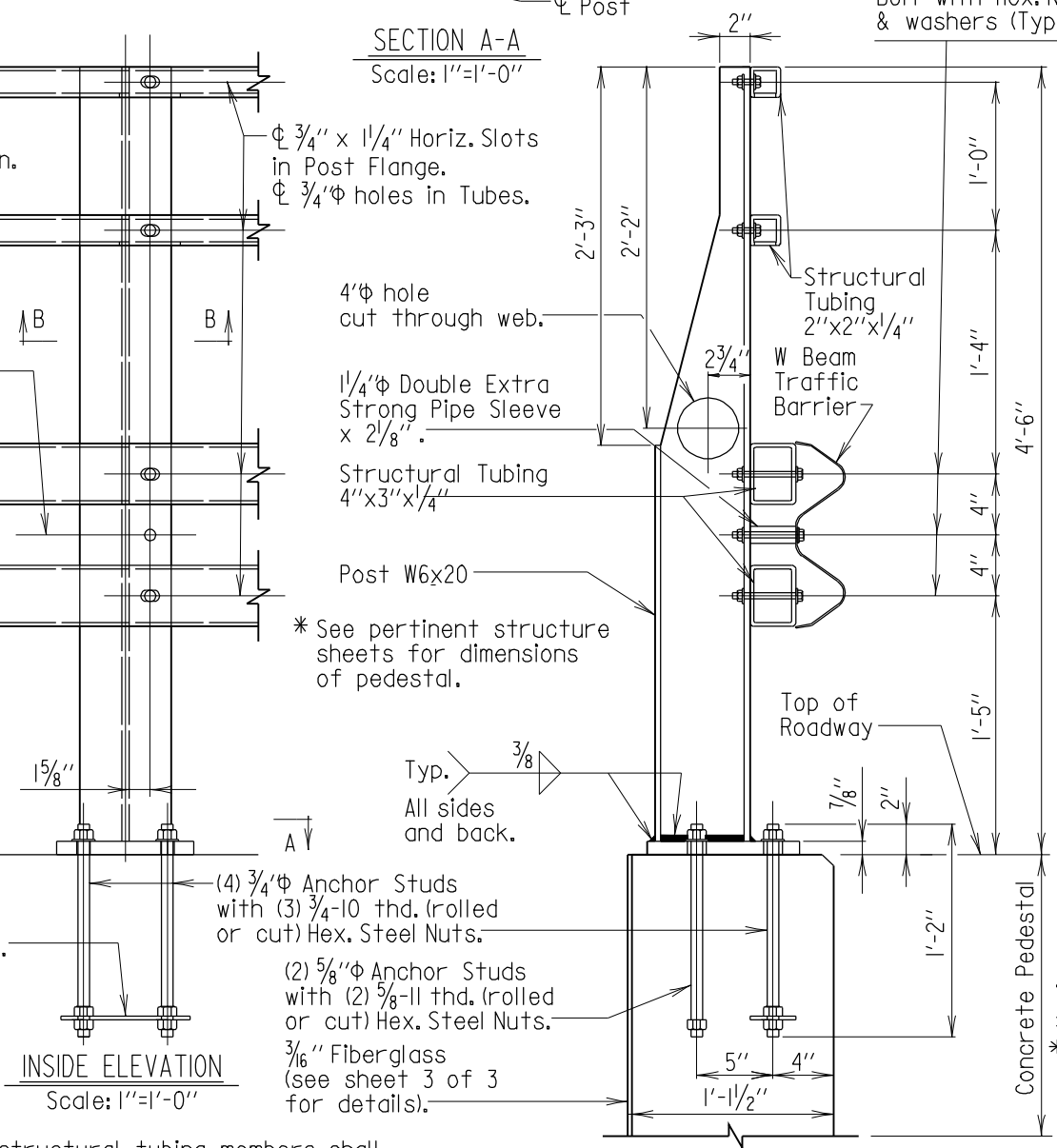
SHEET 3 OF 3



SECTION A-A
Scale: 1''=1'-0''



INSIDE ELEVATION
Scale: 1''=1'-0''



SECTION
Scale: 1''=1'-0''

Notes:
1. Panel lengths of structural tubing members shall be attached continuously to a minimum of three posts except at abutments with expansion joints.
2. All steel components shall be galvanized, after fabrication, unless otherwise shown on Plans.
3. Structural tubing section shall meet ASTM A 572 Grade 50. All other steel except bolts shall meet ASTM A 36.
4. All anchor studs and nuts shall meet ASTM A 325.
5. Maximum post spacing 6'-3''.
6. Posts shall be set vertical for level or low side roadway and perpendicular to high side superelevated roadway.
7. Fiberglass to be used only when indicated on pertinent structure sheets.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

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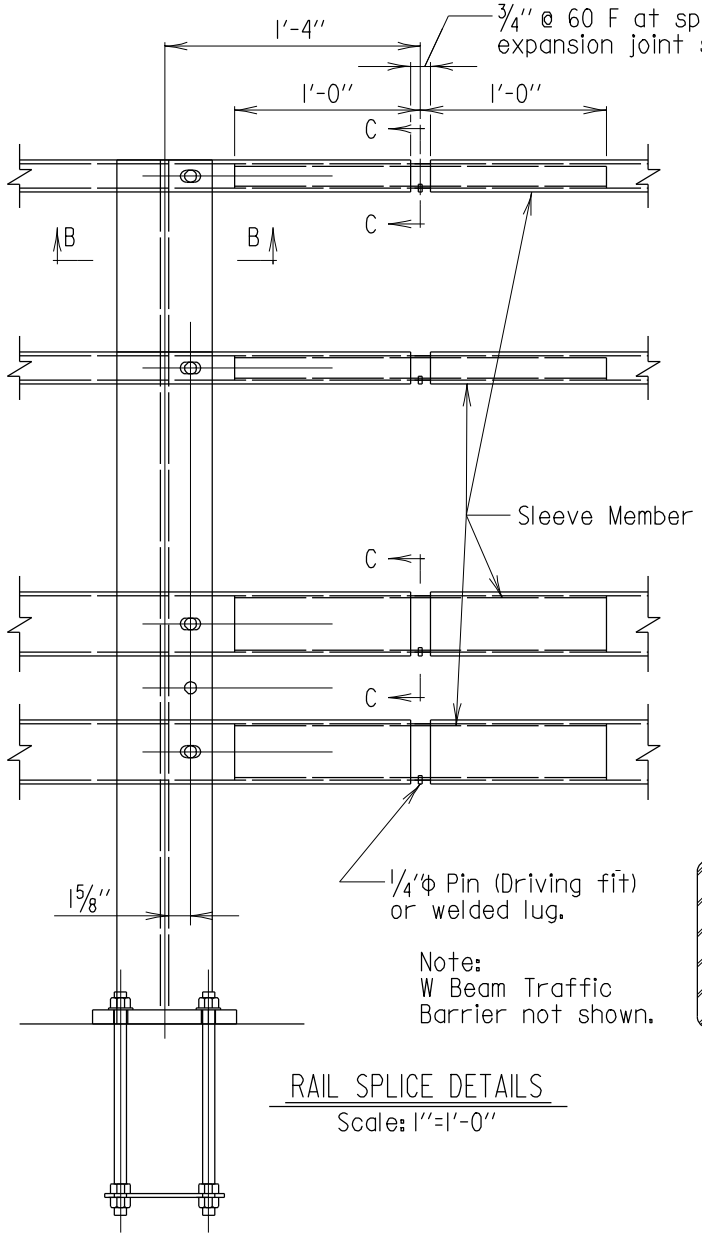
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

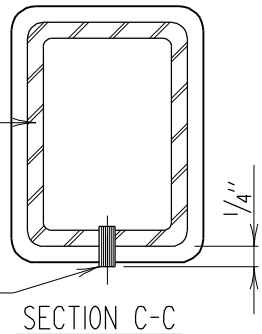
COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL AND BIKE RAIL FOR STRUCTURES

STANDARD NO. BC(6.12)-90-219 SHEET 1 OF 3

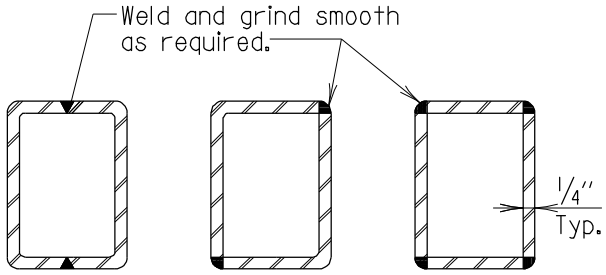
BOX CULVERT



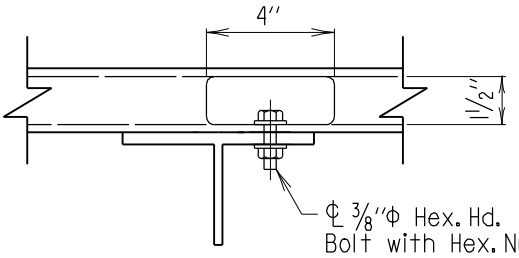
RAIL SPLICE DETAILS
Scale: 1"=1'-0"



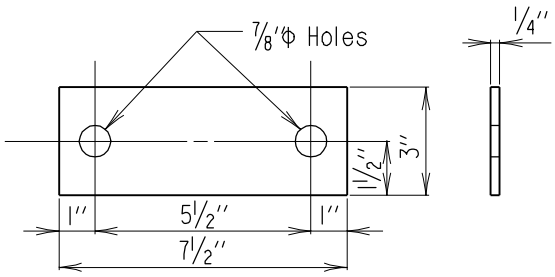
SECTION C-C
Scale:None



SLEEVE FABRICATION OPTIONS
Scale:None



SECTION B-B
Scale:None



ANCHOR PLATE
Scale: None

Note:
The difference between the outside dimensions of the sleeve and the inside dimensions of the rail shall not exceed 1/8" along either axis.

APPROVAL
E.S. Freedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

REVISIONS	
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FHWA APPROVAL
DATE:

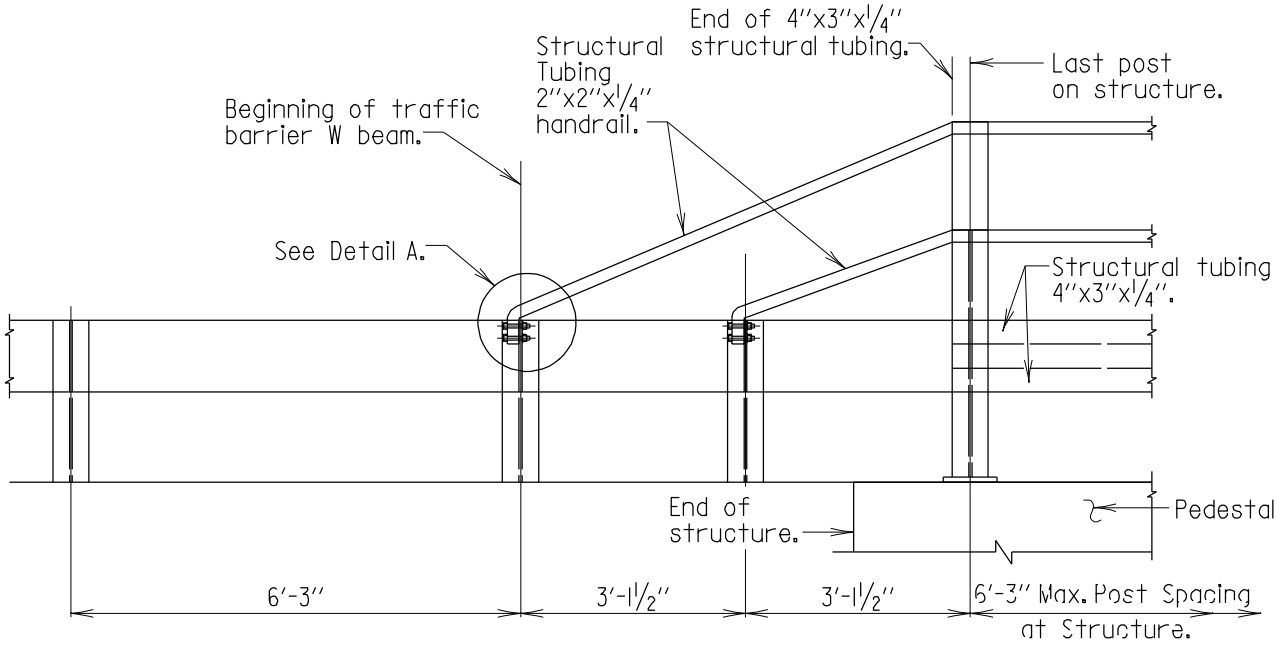
STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL AND BIKE RAIL FOR STRUCTURES

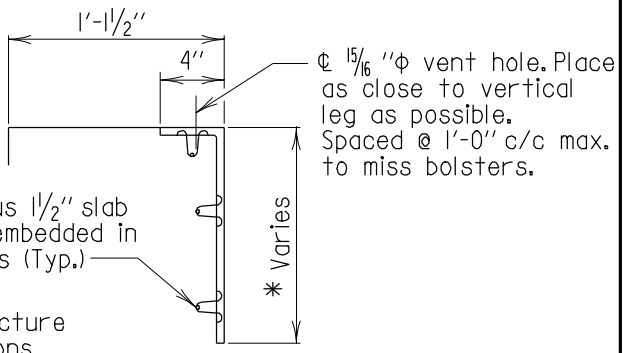
STANDARD NO. BC(6.12)-90-219

SHEET 2 OF 3

BOX CULVERT

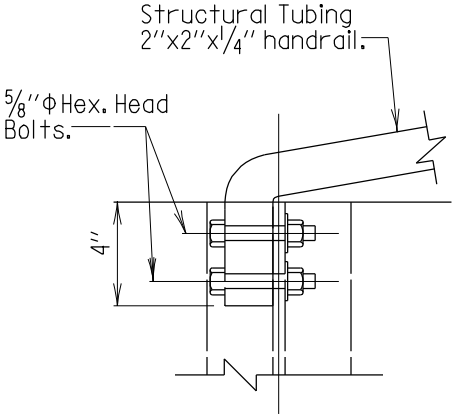


ELEVATION
Scale: 3/4''=1'-0''

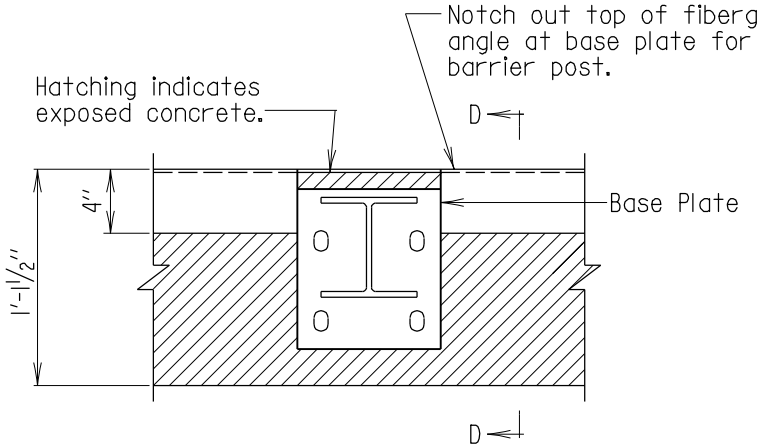


* See pertinent structure sheets for dimensions of fiberglass.

SECTION D-D
Scale: 1''=1'-0''



DETAIL A
Scale: 1 1/2''=1'-0''



FIBERGLASS ANGLE PLAN
Scale: 1''=1'-0''

Fiberglass shall conform to the following requirements :

1. The material shall have a density of 1.25 g/cm^3 min., as determined by A.S.T.M. D 792. It shall not have an absorption of more than 1.0 percent as measured by A.S.T.M. D 570.
2. The tensile strength of the material shall be measured in the longitudinal and transverse directions on specimens cut to an approximate size of 1/2'' x 6''. When tested in accordance with A.S.T.M. D 638, the average of 5 specimens in each direction shall yield a 10,000 p.s.i. minimum strength.
3. The thickness shall be 3/16'' (+1/16'' - 0'') unless otherwise noted. The surfaces of the fiberglass designed to bond with other materials shall be free of bond inhibiting agents.
4. The color shall match Federal Standard 595-26622 gray.

APPROVAL
E S Friedman DIRECTOR OFFICE OF BRIDGE DEVEL.
DATE: 4/23/90

REVISIONS	
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FHWA APPROVAL
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STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
OFFICE OF BRIDGE DEVELOPMENT

COMBINATION W BEAM TRAFFIC BARRIER WITH HANDRAIL AND BIKE RAIL FOR STRUCTURES

STANDARD NO. BC(6.12)-90-219 SHEET 3 OF 3

BOX CULVERT